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NOTES ON UREDINEAE—V

E. W. D. HOLWAY

PUCCINIA PORTERI Peck

This species was collected in Colorado by J. M. Coulter and the host reported as *Veronica alpina*. The type has recently been examined and found to be *Puccinia Holboellii,* on some crucifer, probably *Arabis.*

PUCCINIA ALBULENSIS P. Magn.

This is the name by which the common American *Puccinia* on *Veronica alpina* must be known. It is very common in the Canadian Mountains, occurring above timber line or on the moraines near the ice.

PUCCINIA RHAETICA Ed. Fischer

This species has not been hitherto reported for North America, but it is abundant at about 6,500 feet elevation on Mt. Ranier, growing on *Veronica Cusickii.*

PUCCINIA TRIFOLIATA E. & E.

This proves to be *Puccinia Osmorrhizae* C. & P., on *Osmorrhiza* sp. It was collected at Seattle, Washington, by C. V. Piper and reported to be on *Tiarella trifoliata.*

PUCCINIA PALLIDA Tracy

This is *Puccinia Anemones-virginianae* Schw., on some *Anemone.* It was collected in Wisconsin by S. M. Tracy and published as on *Osmorrhiza.*

PUCCINIA OREGONENSIS Earle

This species was collected in Oregon by Moses Craig, said to be on *Sanicula bipinnata.* The packets contain the fruit of the *Sanicula* and the leaves of a *Leptotaenia,* with the fungus on the leaves only. It is *Puccinia asperior* E. & E. The host is probably *Leptotaenia dissecta.*

PUCCINIA LIGUSTICI E. & E.

The type of this species is not on *Ligusticum scopulorum,* but *Oxypolis Fendleri.* It has been collected at Ruby, Colorado, at 9,500 feet by C. F. Baker, on *Oxypolis.* It also occurs on species of *Ligusticum, Carum,* and *Angelica.* The teleutospores are not smooth, as described, but have two or three rows of small tubercles. *Puccinia luteobasis* is the same thing, but with more of the oblong spores. Similar forms occur on *Ligusticum,* and, with a large collection, it is easily seen that they cannot be separated. It was published as on an unknown umbelliferous plant. Specimens sent by Professor Bethel, said to be the same as the type, are on *Conioselinum scopulorum* (Gray) C. & R. The type specimen could not be found.

It is very interesting to note, in view of recent discoveries among the heteroecious rusts, that the teleutospores of *Puccinia Ligustici* cannot be distinguished from those of the large-spored form of *Puccinia Bistortae* on *Polygonum.* The latter has been shown to have in Europe its aecidial stage on Umbelliferae. No cultures have been made in this country, but no doubt the same is true here.

PUCCINIA MUSENII E. & E.

This species has very long, slender, 1–3-septate pedicels, and the teleutospores are closely and evenly verrucose, not reticulate. It has been distributed on *Pseudo-cymopterus* as *Puccinia Jonesii* (Pls. Wyo. No. 36, and Crypt. Form. Col. No. 139), and also as *Puccinia Pimpinellae* (Pls. Wyo. No. 7365).

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